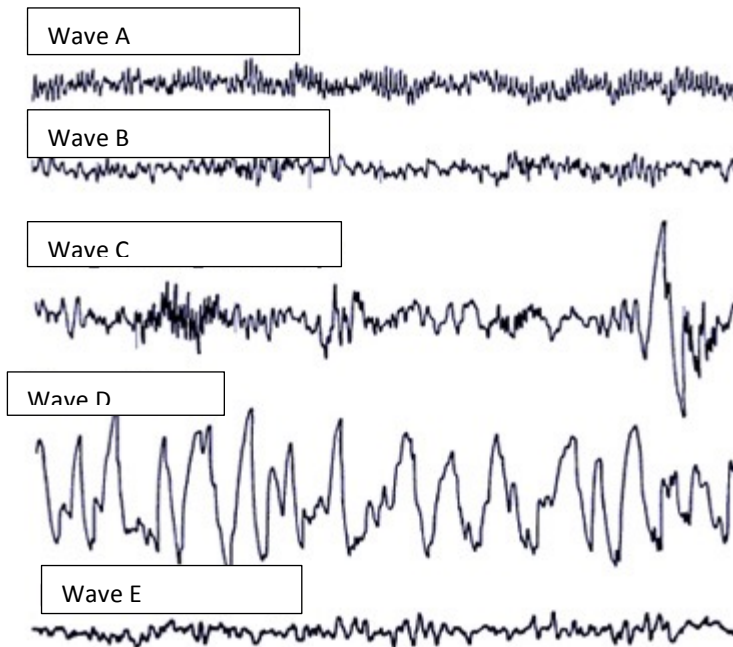


## Station 1



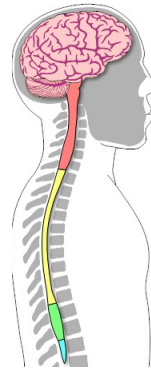
1. What vitamin deficiency is common in about 80% of alcoholics? ( 1 point)
2. Korsakoff psychosis is usually due to degeneration of what structure in the brain? (1 point)
3. All of the following are true regarding alcoholism except (1 point)
  - a. A person with a parent or sibling with alcoholism is 3-4 times more likely to be alcoholism.
  - b. It is a physical and mental illness.
  - c. Binge drinking is less dangerous than chronic drinking
  - d. Depression is a common symptom of chronic alcoholism
4. Delirium tremens is ( 1 point)
  - a. A symptom of chronic alcoholism
  - b. A symptom of early morning drinking
  - c. A symptom of drinking in pregnant women
  - d. A symptom of alcohol withdrawal
5. Alcohol tolerance is due to ( 1 point)
  - a. Increased production of liver enzymes causing increased metabolism
  - b. Adaptation of GABA system in the brain
  - c. Administration of alcohol in the same environment
  - d. a and b only
  - e. b and c
  - f. a,b,and c

## Station 2



6. Sleep spindles are seen in which waves? (1 point)
7. Hypnagogic hallucinations are seen during which wave pattern? (1 point)
8. Sleep walking is common during which wave pattern? (1 point)
9. Most dreaming occurs during which wave pattern? ( 1 point)

## Station 3



**Match the functions given below with the following nervous systems (choices can be used more than once or not at all) (1 point)**

- a. Sympathetic
- b. Parasympathetic
- c. Somatic
- d. Sensory

- 10. Nerves from this system connect to all skeletal systems and associated with voluntary control-
- 11. Acts on the adrenal medulla to increase secretion of epinephrine and also Norepinephrine-
- 12. Slows down the heart rate and reduces contractile force of the cardiac muscle-
- 13. The oculomotor nerve is part of this system-
- 14. Increases salivation and lacrimation-
- 15. Single neuron from central nervous system to effector organ-

## Station 4

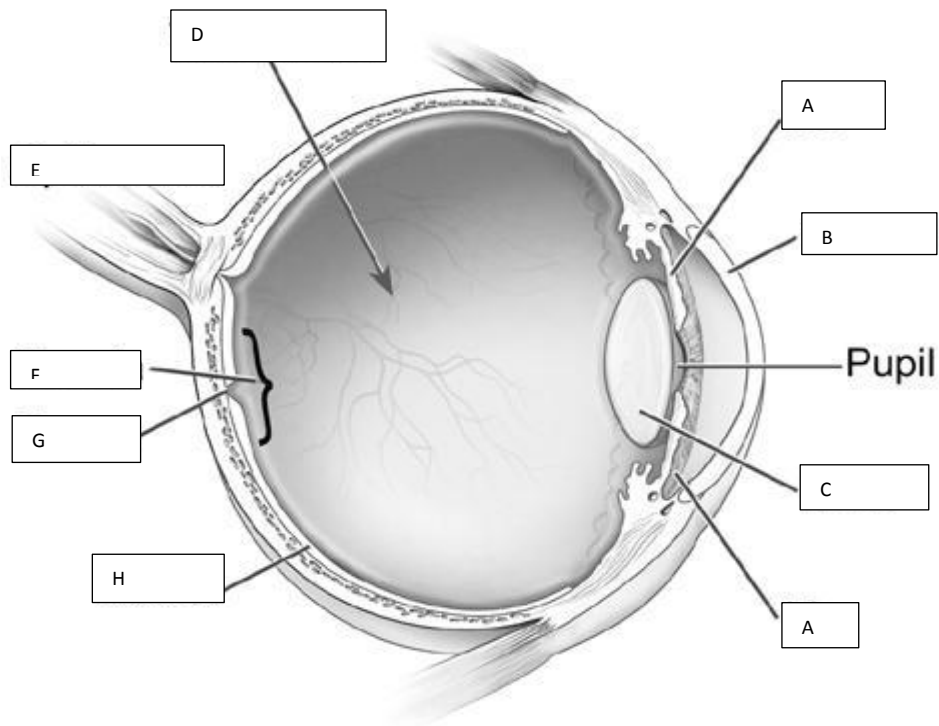


**Match the disorders with the scenarios given below (choices can be used more than once or not at all)** (1 point)

- a. Multiple sclerosis
- b. Cerebral palsy
- c. Epilepsy
- d. Glaucoma

- 16. 10 year old kid comes into the hospital with difficulty walking. Exam shows scissor gait, slow growth, and stuttering.
- 17. 10 year old person is brought in by a parent with complaints of losing consciousness. Parent has noticed sudden staring spells, lip smacking, and eyelid fluttering.
- 18. 40 year old comes into the emergency room with headaches and a sudden loss of vision. He states he was watching a movie when he started feeling this headache.
- 19. 45 year old person comes in with symptoms of fatigue, dizziness, pins and needles sensation, and blurred vision for the past few months.

## Station 5



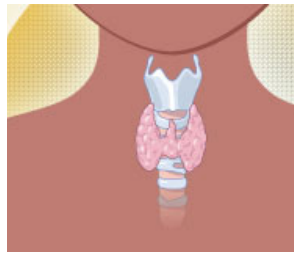
20. Identify area F (1 point)
21. In glaucoma, the pressure increases in which area of the eye? (1 point)
22. Astigmatism is due to irregular curvature of which parts of the eye? (2 points)
23. Where are the photoreceptors located? (1 point)
24. Which structure is responsible for a person's eye color (state the letter)? (1 point)

## **Station 6**



25. Name the bone which fills the oval window in the ear. (1 point)
26. What are the two functions of inner ear? (2 points)
27. Name the tube which connects the middle ear to the back of the throat. (1 point)
28. Otitis media is an infection of the \_\_\_\_\_ ear. (1 point)

## STATION 7



**Name one hormone that will be secreted in response to the following** (1 point)

29. Dehydration-

30. Hypocalcemia-

31. Hypoglycemia-

32. Hyperglycemia-

33. Hypercalcemia

## Station 8

**Read the clinical scenario and answer the questions.**

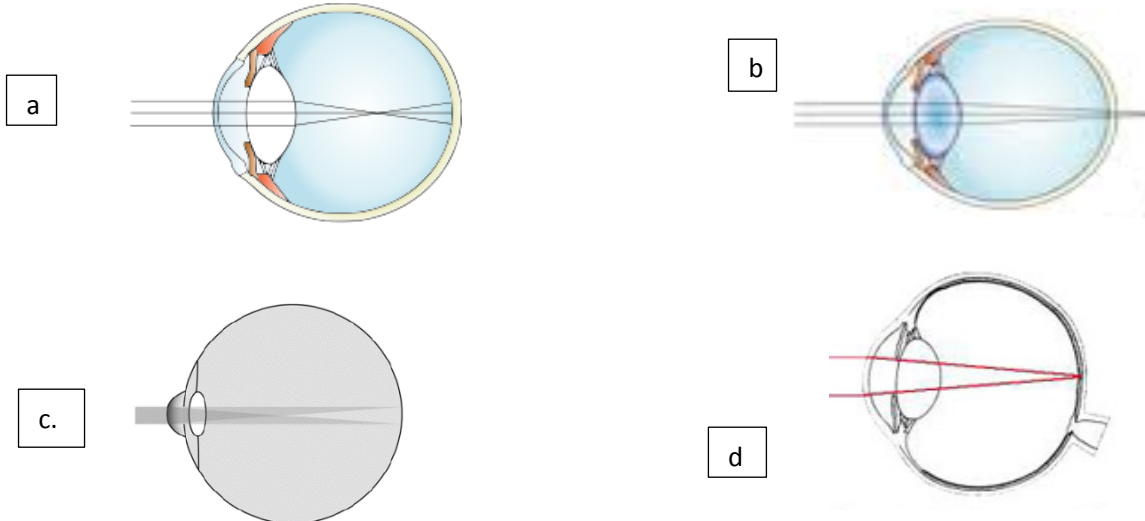
(1 point)

A 10 year old girl was brought to the eye clinic with complaints of headache. On further questioning, the child says that she has difficulty looking at the board at school. Mom states that she has noticed the child squinting while watching television at home. This has started over the past few months. Mom also states the child is able to read a book without any problem. You do an eye exam.

34. What is the diagnosis?

35. How will you confirm the diagnosis?

36. Choose a picture below which depicts the focus of light rays in the retina in this condition.

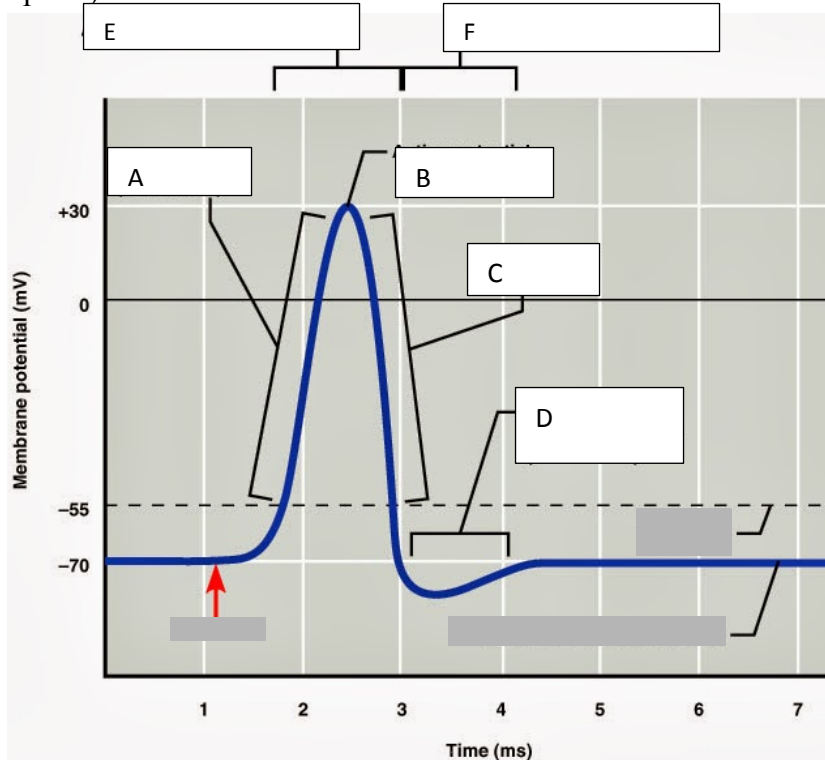


37. Choose the lens used for treatment of this condition.



## Station 9

Mark the letters for the questions based on the following graph (1 point)



38. The period where a nerve fiber cannot be stimulated even when a strong stimulus is applied.

- a. A                      b. B                      c. C                      d. D                      e. E                      f. F

39. At what point do the voltage gated  $\text{Na}^+$  channels close?

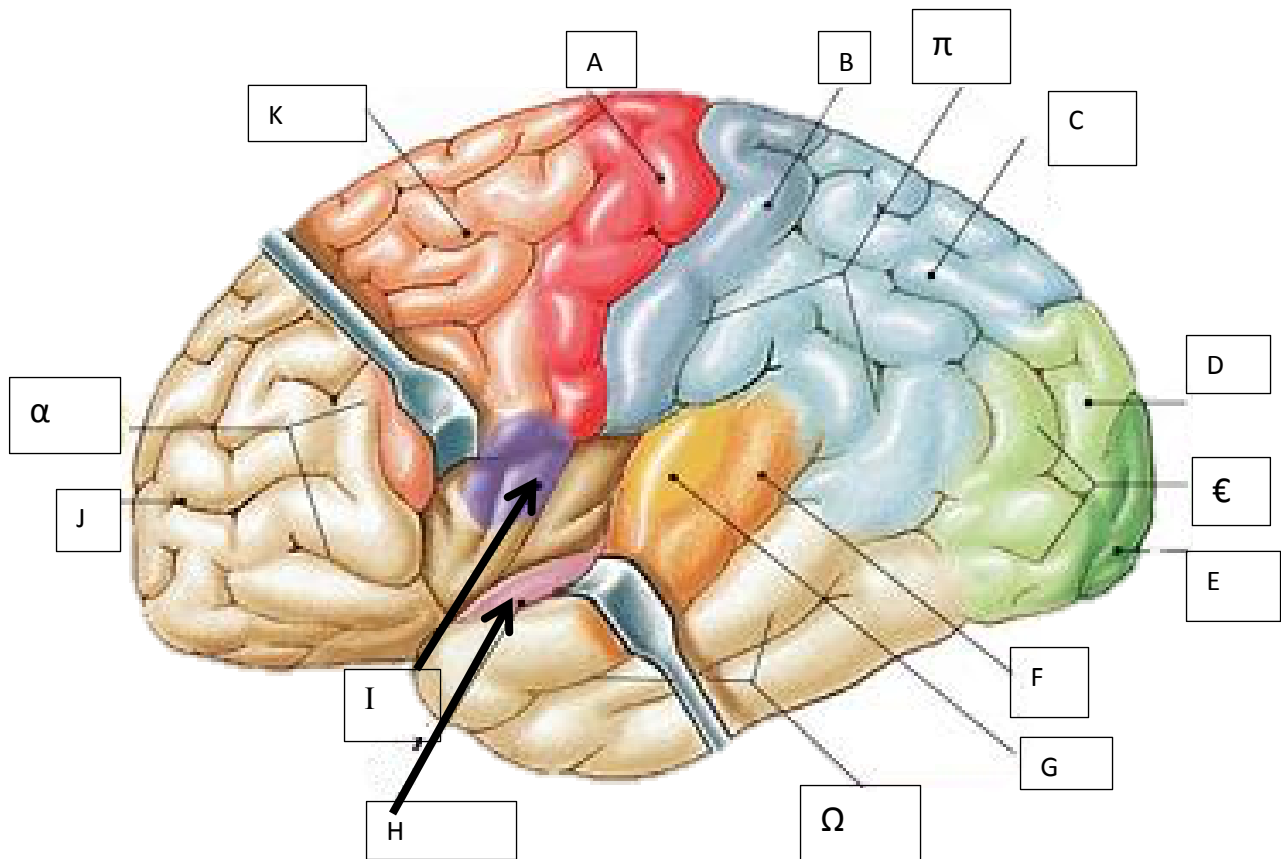
- a. A                      b. B                      c. C                      d. D                      e. E                      f. F

40. At what point do the voltage gated  $\text{K}^+$  channels close?

- a. A                      b. B                      c. C                      d. D                      e. E                      f. F

41. -55mV is also known as the \_\_\_\_\_ potential.

## Station 10



**Study the above picture. Lobes are represented by symbols and the special areas are represented by letters. Answer the following questions.** (1 point)

42. Identify letter I
43. The lobe involved in reasoning and problem solving is
  - a.  $\Omega$
  - b.  $\epsilon$
  - c.  $\alpha$
  - d.  $\pi$
44. Identify Area K
45. Identify the cranial nerve coming to area H
46. Identify the cranial nerve coming to area G

## Station 11



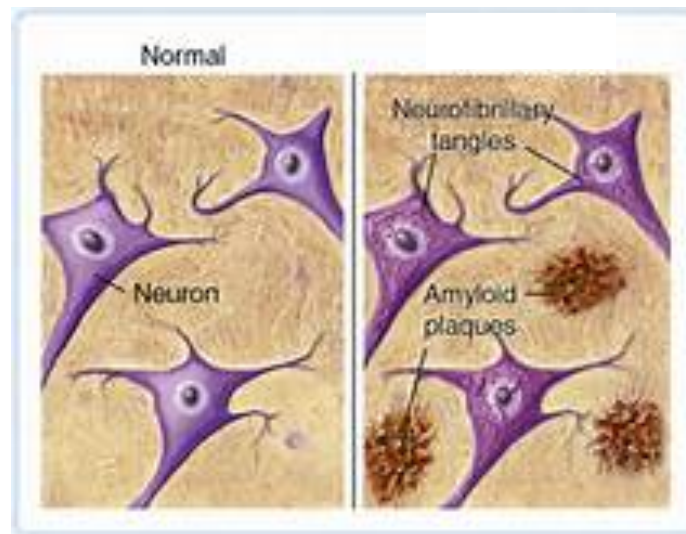
47. Diagnosis is \_\_\_\_\_. ( 1 point)

48. Caused by \_\_\_\_\_. ( 1 point)

49. The nerve affected in this condition is \_\_\_\_\_. ( 1 point)

50. Prevention is by \_\_\_\_\_. ( 1 point)

## Station 12



**Answer the following questions based on the brain pathology picture shown above**

(1 point)

51. The brain disorder shown in the above picture is
- |                        |                         |
|------------------------|-------------------------|
| a. Amyloidosis         | d. Alzheimer's dementia |
| b. Parkinson's disease | e. Epilepsy             |
| c. Multiple sclerosis  |                         |
52. Common symptom of this disorder is
- |                       |             |
|-----------------------|-------------|
| a. Tingling, numbness | d. Seizures |
| b. Memory loss        | e. Tremors  |
| c. Headache, vomiting |             |
53. Initial diagnosis of this disorder is by
- |                         |                               |
|-------------------------|-------------------------------|
| a. Brain Biopsy         | d. Magnetic resonance imaging |
| b. Lumbar puncture      | e. Mini mental status exam    |
| c. Electroencephalogram |                               |
54. Which neurotransmitter is implicated as one of the causes of this disorder?
- |                      |                       |
|----------------------|-----------------------|
| a. Low dopamine      | d. high acetylcholine |
| b. High dopamine     | e. low serotonin      |
| c. Low acetylcholine |                       |

## **Station 13**



55. Diagnosis of the above condition is \_\_\_\_\_. (1 point)
56. Causes for this condition include (1 point)
- a. Hypothyroidism
  - b. Hypercortisol
  - c. Hypoaldosteronism
  - d. Hyperparathyroidism
57. Tests done to confirm the diagnosis includes (1 point)
- a. Cortisol level
  - b. PTH level
  - c. ADH level
  - d. TSH level
58. Cause for endemic form of this disorder is due to deficiency of \_\_\_\_\_. (1 point)

## **Station 14**

### **Watch the video and answer the following questions**

(1 point)

You can watch as much or as little of the video as you want

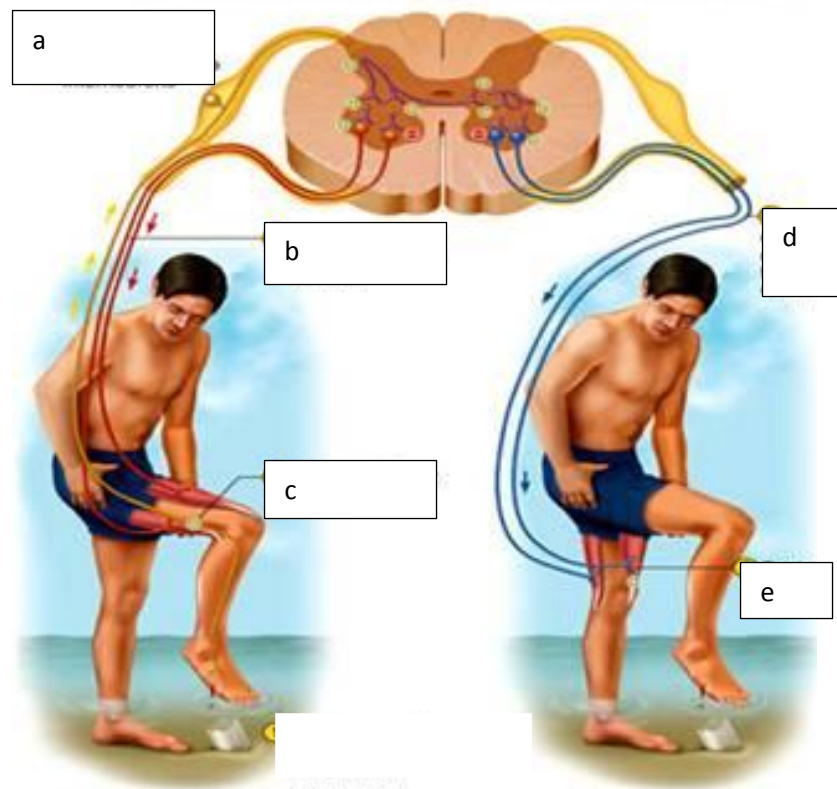
59. Diagnosis of this man's condition is
- a. Alzheimer's dementia
  - b. Adult onset cerebral palsy
  - c. Chronic alcoholism
  - d. Old age
  - e. Parkinson's disease
60. The gait shown in this video can be described as
- a. Wide based ataxic gait
  - b. Spastic gait
  - c. Slow shuffling gait
  - d. Normal gait
61. The type of tremor seen in this video is called
- a. Resting tremor
  - b. Action tremor
  - c. Intention tremor
  - d. Kinetic tremor
62. Secondary form of this disorder is due to
- a. Chronic neurodegeneration
  - b. Loss of neurons in substantia nigra
  - c. Death of dopaminergic neurons
  - d. Anti-psychotic medications

## **Station 15**

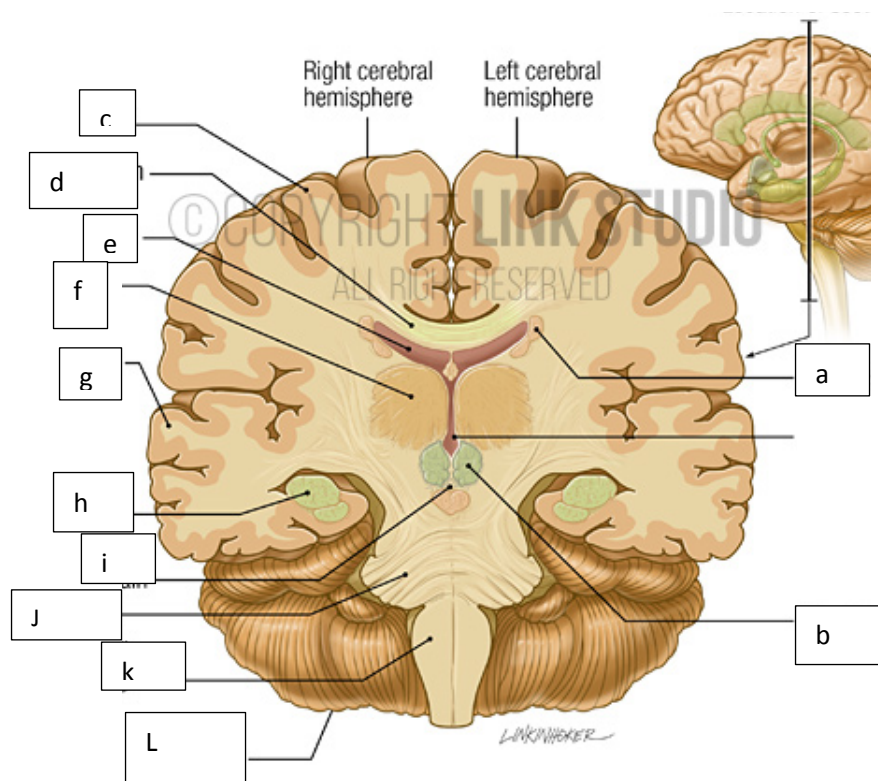


**Answer the following questions based on the above picture** (1 point)

63. Diagnosis of the above condition is \_\_\_\_\_.
64. Cause of this disorder is due to \_\_\_\_\_.
65. This disorder is characterized by thickening of skin the leg as well. The dermatopathic changes in the leg are called \_\_\_\_\_.
66. The hormone responsible for this condition is
- a. Water soluble hormone
  - b. Hormone enters cell and forms hormone-receptor complex
  - c. Steroid derived
  - d. None of the above

**Station 16**

67. Type of receptor activated by right foot stepping on glass is (1 point)
- Nociceptors
  - Mechanoreceptors
  - Chemoreceptors
  - Photoreceptors
68. The signal travels via sensory neurons to the (1 point)
- Anterior horn of spinal cord
  - Both dorsal and ventral horn of spinal cord
  - Dorsal horn of spinal cord
  - Ventral horn of spinal cord
69. The crossed extension reflex is because (1 point)
- Sensory neuron synapses with contralateral motor neuron
  - Sensory neuron synapses with ipsilateral motor neuron
  - Both a and b
  - Neither a or b
70. This type of reflex is considered (1 point)
- Monosynaptic
  - Polysynaptic
  - Can be both
  - Neither, it is a direct reflex

**Station 17**

71. Which letter represents Basal ganglia?

(1 point)

72. Identify letter b

(1 point)

73. Identify letter h

(1 point)

74. Identify letter f

( 1 point)

## **Station 18**



75. What receptor does marijuana act on?
- a. Acetylcholine receptors
  - b. Cannabinoid receptors
  - c. Endorphin receptors
  - d. Adrenergic receptors
76. Which of the following drugs crosses the blood-brain barrier?
- a. Caffeine
  - b. Alcohol
  - c. Nicotine
  - d. a and b
  - e. b and c
  - f. a and c
  - g. All of the above
77. Drugs of abuse have been shown to cause dependence and addiction by acting on which of the following glial cells?
- a. Astrocytes
  - b. Microglial cells
  - c. Satellite cells
  - d. Ependymal cells

State whether the following drugs are stimulants (S), depressants (D), both (B), or neither (N).

- 78. Alcohol
- 79. Nicotine
- 80. Cannabis
- 81. Caffeine